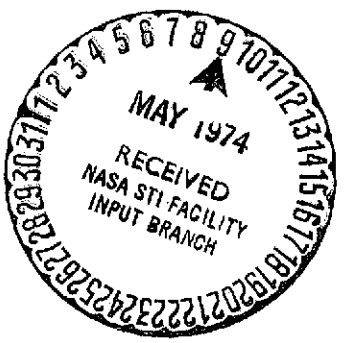
THE DANGERS OF STAYING IN BED

(The Deleterious Effects of Bed Rest)

L.E. Böttiger

Translation of "Det farliga sängläget," Nordisk Medicin, Vol. 75, No. 7, 1966, pp. 188-189



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16. Abstract

This article is a general discussion and review of the (scant) literature on the deleterious effects of bed rest. When healthy young research subjects were treated with strict bed rest, there were found marked orthostatic hypertension, a reduced capacity on the stationary bicycle ergometer, and an increased calcium secretion. The first two changes were improved or reduced by allowing the patients to exercise or to sit up; the third, only by having them maintain an upright position for at least 3 hours per day. The tendency among physicians today is to make the patient ambulatory as soon as possible.

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"Look at a patient lying in bed. /188*
What a pathetic picture he makes.
The blood clotting in his veins,
the lime draining from his bones,
the scybala stacking up in his colon,
the flesh rotting from his sweat,
the urine leaking from his distended bladder
and the spirit evaporating from his soul."

-- Dr. Richard Asher
(Brit. Med. J. 2, 967 (1947))

Many people who have been given penicillin for some minor infection complain about the considerable fatigue the penicillin occasioned, without reflecting that it probably was the primary infection which made them tired. Others, who have been confined to bed for some simple complaint, lament that the illness makes their legs shaky, without thinking that it is the bed rest in itself that contributes to making them tired.

There is no doubt that one really may talk of the dangers of staying in bed. The complications that can set in when a sick person is confined to bed are all well-known -- most of them are listed in the quote above. However, it may often be difficult to determine what part is played by the primary illness and what is due to the patient's having stayed in bed. It is worth noting that there are comparatively few studies of the effects of staying in bed. Available data have recently been compiled and commented upon in book form (N.L. Browse, The physiology and pathology of bed-rest, Thomas, Springfield, 1965). This is a book which can be recommended reading for all who order bed rest -- before the order is given. Here one finds details about the physiological

*Numbers in the margin indicate pagination in the foreign text.

changes which take place as a result of bed rest, as well as chapters dealing with the advantages -- there actually are some -- and disadvantages of staying in bed.

With regard to the difficulties in differentiating between the effects of primary illness and bed rest per se, the investigations published in this issue are of the greatest interest. Rodahl et al. (Nord. Med. 75, 182 (1966)) have investigated the effect of bed rest on healthy, young research subjects. At the outset, the subjects were treated with strict bed rest, during which they were permitted to move arms and legs in bed, but not to lift their heads from the pillow. In all of them were found, after the stay in bed, a marked orthostatic hypertension, a reduced capacity on the stationary bicycle ergometer, and an increased calcium secretion.

These changes are already well known. In order to determine whether they result from the inactivity or from the horizontal position, the research continued, in part with exercise in sitting or prone position, in part with "chair sitting," all combined with bedrest. Exercise was able to counteract the loss of performance capacity, but not the orthstatism, and it had no effect upon the calcium secretion, which remained at an increased level. By sitting up for several hours every day, the research subjects lost only a little of their performance capacity, and the orthostatism was counteracted, but the loss of calcium remained high. However, by maintaining an upright position for 3 hours a day, while staying in bed for the remainder of the 24-hour period, the subjects were able to reduce their calcium loss. The authors think that the effect of normal gravity upon the long bones while in their full upright position is the normal stimulus necessary for the skeleton to retain its calcium level. The conclusion is that all patients should get out of bed as soon as possible, and not just into an easy-chair without actually being on their feet.

It is interesting that these observations regarding the old treatment of bed rest now are of importance for space travel. It can be shown that the same changes which take place during extended bed rest can occur in astronauts even after quite short space trips.

Formerly it was axiomatic that a hospitalized patient should remain in bed; there is a reason for the phrase "lying hospitalized." Even up to the present, bed rest has been as matter-of-course as bloodletting in the medical practice of earlier centuries. At least with regard to bloodletting, we know that it has many lives on its conscience!

However, during the last few decades there has been an almost complete change of approach. It is the surgeons who have led the efforts to get rid of, or at least decrease, extended stays in bed. The discovery that the frequency of thrombosis could be lowered dramatically by making the patient get out of bed at an early stage was, in many ways, a revolutionary one, and it has actively contributed to the diminished use of bed rest in medical practice.

There can be no doubt that it should be the rule that only those patients be ordered to remain in bed for whom such treatment is really necessary; all others should automatically be expected to be ambulatory. /189

Elderly patients show a preference for staying in bed and must actively be urged to get up. Early ambulatoriness, individually adjusted, is more and more often being used in the treatment of heart attacks, and it is becoming increasingly uncommon for protracted infections to lead to enforced bed rest. Personally I have never been able to understand that the healing of hepatitis should be influenced by the body's position or be dependent upon whether the liver is in a horizontal or vertical position. Research shows that bed rest has no beneficial effect

on the progress of hepatitis in either the short or the long run (Nefzger and Chalmers, Amer. J. Med. 35, 299 (1963). There seems to be little evidence that the lengthy periods of bed rest which formerly were prescribed for such patients were of benefit -- one might almost be tempted to claim the opposite.

Bed rest does, however, have another aspect besides the purely medical one. The much reduced reliance upon bed rest must also be considered in planning new hospitals. There is nothing to suggest that what at present is considered a conventional bed capacity for the number of patients admitted will be considered the necessary ratio in the future. It may be that the number of bed units in many places already is in the upper limit of what is needed, provided that the hospitals for acute cases can somehow be rid of the chronically ill and those requiring a long convalescence. An increased number of ambulatory patients will mean completely different and increased demands for recreation rooms, day rooms, TV rooms, smoking lounges, and dining rooms.